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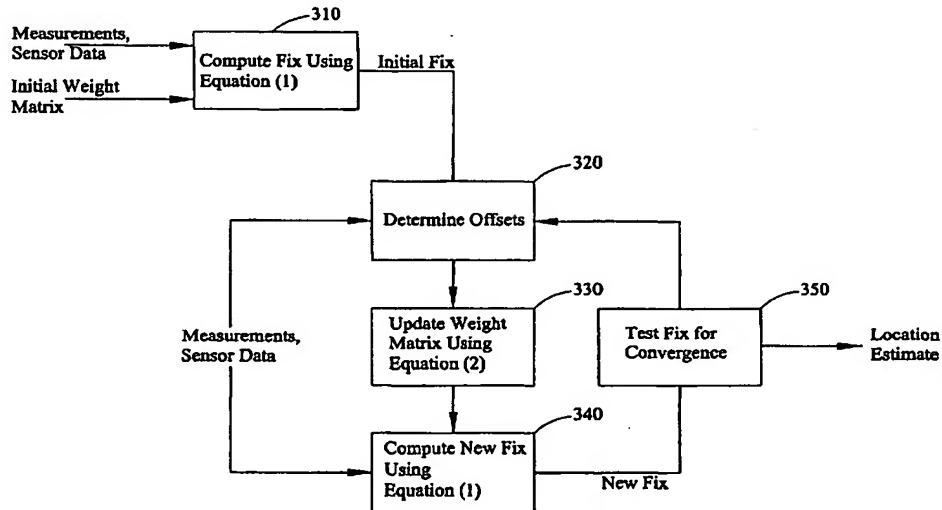


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(57) Abstract: A method for enabling a system to enhance the accuracy of a location estimate modifies weights in a weight matrix associated with receiver station measurements in parallel with successive refinements of the location estimate. In a typical location estimation scenario, several receiving stations simultaneously derive measurements of a signal from the emitter. Any one of these measurements is in general some function of the emitter location and the receiving station location. The aggregate of these measurements is often in excess of the minimum number of measurements required to provide an estimate of the emitter location. Where such an excess exists, the method proceeds by modifying the weights associated with the measurements in parallel with successive refinements of the location estimate. The method can be implemented over various cellular protocols with a consistent and significant enhancement in the accuracy of location estimates.

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